Mapping and Modelling the 'Invisible Dead': Reconstructing Demographics in the Ancient Near East

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Introduction

In spite of the fragmentary nature of the mortuary record, and acknowledgment of the manipulation of the dead by the living, mortuary populations are often viewed as a useful and reliable way of reconstructing past human demography and social organisation on a local basis (e.g., Binford 1972; Shay 1983: 27; Yasur-Landau 1992: 244; Zimmerman *et al.* 2009: 369). Conversely, there has been a tendency to steer away from tackling such questions at a regional scale and a general avoidance of 'big picture' approaches to the reconstruction and understanding of 'mortuary' populations. In the Near East this is partly due to the fragmentary nature of the archaeological record, as well as the legacy of 'object' based research which, until recently, rarely prioritised human skeletal material (Perry 2012: 457). While scholars in the region have begun to explore the landscape location, chronological and typological distribution of burial forms (e.g., Bradbury and Philip 2011; Carter and Parker 1995; Steimer-Herbet 2004) there have been few attempts to consider what might be missing or to question the apparently representative nature of our data. To some extent, quantifying the dead spatially and temporally might be viewed as a near-impossible task. The current authors were both inspired by, and privileged to work with, Tony Wilkinson in his efforts to combine multiple regional datasets to make broad statements on matters of settlement and landscape exploitation (e.g., Lawrence and Wilkinson 2015; Wilkinson 2003; 2004; Wilkinson *et al.* 2014), an experience that indicated to us the potential of a 'big data' study of the mortuary record. In particular, Tony's delineation of 'Zones of Preservation' and 'Zones of Attrition' (Wilkinson 2003: 41–43), which highlighted the necessity of building methodologies and techniques to quantify and interpret the uncertainties associated with the archaeological record, has shaped our approach to mortuary data. We have recently used such an approach to highlight the existence of distinctive regional trends in the space-time distribution of mortuary remains across the Levant (Bradbury and Philip 2016; 2017). The present paper, however, offers a more detailed consideration of three sites. This we offer on the basis that the identification of the 'gaps' in the mortuary record as it presents archaeologically, is a necessary step in a reconsideration of the role of the dead within living communities.

The demographic enigma

Studies exploring the living demography of past populations have often focused on the reconstruction of household size, occupation areas, and probable sustaining areas and subsistence yields (e.g., Widell *et al.* 2013; Wilkinson 1994). Studies of mortuary populations have, in contrast, focused on information that can be extracted directly from skeletal remains: individual health, nutrition, and age at death profiles (e.g., Ortner and Frohlich 2008). The extent to which we can combine these two approaches and reconstruct comprehensive demographic profiles based on fragmentary archaeological evidence is less clear. For the present discussion we have adopted a figure of 100 individuals per settled hectare (e.g., Wilkinson *et al.* 1994: 503) and an average age at death of 35 years, a value based on mortality curves for traditional agricultural societies (Chamberlain 2006: 67, fig. 3.7). While these figures might lead us to significantly underestimate, or in some cases overestimate (see below for further discussion), the possible population of a single site at any given time, they are useful as heuristic tools through which to begin to explore and compare the demographics of mortuary and living populations.

Numerous pitfalls exist when dealing with temporally variable and uncertain datasets: these are addressed in greater detail elsewhere (Bradbury *et al.* 2015; Lawrence, Bradbury and Dunford 2012). Methodologies used to represent/re-calculate frequencies over time can lead to flattening or potential false peaks within the data. For example, plotting the Minimum Number of Individuals (MNI) from a particular cemetery per 100-year block,[1] the practice followed here, can over-inflate the relative numbers. Conversely, the more intuitive approach of dividing the MNI by the length of that particular archaeological period is often more a reflection of our ability to characterise and date discrete periods, than a genuine aid to data quantification. For the purposes of this paper all graphs have been plotted using century-long time blocks, a technique that we have found useful for comparing settlement data across regions that use different systems of periodisation.

[1] Based on each MNI for a given period having an equal likelihood of having occurred within each 100-year block within the period e.g., an MNI of 300 for the EB I (3500–3000 BC) would be plotted out as 300 individuals for each 100-year time block falling between 3500–3000 BC.

These appear to us to represent one of the best ways to deal with 'big picture' data that require comparison of evidence across periods, sites, and regions where chronological precision and period names and attributions differ significantly (Lawrence *et al.* 2012 for further discussion).

Jericho

> '...seems to indicate that the Jericho tombs represent the entire population of the site.' (Yassur-Landau 1992: 245)

Extensive excavations have been carried out at Jericho (Tell es-Sultan) since the early 20th century (e.g., Garstang 1932; 1933; 1934; 1936; Kenyon 1960; 1965; Nigro 2009; Sellin and Watzinger 1913). Kenyon's work revealed substantial extramural cemeteries to the north and northwest of the settlement mound. Based on the possible presence of undiscovered tombs within the extramural cemetery areas, Kenyon (1965: 1) initially suggested that the mortuary population of Jericho could be twice as large as that excavated. The majority of investigators, however, have treated the mortuary population from Jericho as representative of, if not the entire population, at least a substantial proportion of it (e.g., Palumbo 1987; Shay 1983; Yassur-Landau 1992: 245).

Estimating the mortuary population (the extramural cemetery)

Work carried out by the 'Invisible Dead' Project has brought together data from Kenyon's original excavations with the work of Garstang (1932; 1933; 1934; 1936) and Sellin and Watzinger (1913). Values for the Minimum Number of Individuals (MNI) have been re-calculated in light of recent re-assessments (e.g., Shafiq 2010) and additional details have been recorded by the authors concerning the certainty levels associated with these estimations. While Jericho is famous for its extensive Early Bronze Age IV (EB IV) cemeteries (termed Intermediate Early-Bronze Middle-Bronze by Kenyon [EB.MB]), Figure 5.1 demonstrates that while the Minimum Number of Burial Features (MNBF) — the actual number of tombs in use — during EB IV was significantly greater than in the preceding EBA, the MNI (i.e., the actual number of interments) was lower.

This reflects, in the main, a shift in burial practices, from multiple successive interments in the EB I–III, in which each chamber could contain the remains of hundreds of individuals, to the predominance of single inhumations during the latter half of the 3rd millennium BC. The Middle Bronze Age (MBA) marks the return to multiple successive burial practices, a shift again easily detected by comparing the plots of MNI and MNBF (Figure 5.1). The modest number of late-2nd millennium BC (Late Bronze Age) burials would appear to reflect a potential decline in population, at least as inferred from settlement density, and perhaps also our lack of understanding of Jericho during this period (Bienkowski 1986).

Estimating the mortuary population (Spring Hill and intramural burials)

In addition to the extensive extramural cemeteries, a small number of intramural or 'on-site' burials were discovered at Jericho.

In addition to an unknown number of MBA burials excavated on the western side of Spring Hill by the Austro-German Expedition, mudbrick-built chamber tombs were uncovered during excavations (Sellin and Watzinger 1913: 70–71): these were recently restudied by Nigro (2009). Apart from the hundreds of Aceramic Neolithic burials, the only other burials documented from the tell itself are of MBA date (see Figure 5.2). These are few in number and could account for only a very small fraction of the probable MBA population. We suggest that these represent a burial practice that was deliberately made distinct from the MBA multiple successive burials in the extramural cemetery.

Comparing estimates for the living and the dead

To judge from the published excavation plans, the area within the EBA walls covered approximately 1 ha, and that within the MBA rampart (part of which appears to have been removed by the road that runs along the east side of the present tell), around 1.8 ha (Kenyon 1981: figs 3 and 4). Taking into account the amount of space taken up by the ramparts, an occupation area of circa 1 ha or below for the EBA and 1.5 ha for the MBA would appear sensible. The extent of the on-site EBIV occupation (Kenyon's EB–MB) is difficult to estimate. While occupation of this period was reported from Trenches I, II, and III in the west, north, and south parts of the tell respectively, material from all three areas was of limited extent and characterised by the same greenish coloured mudbrick: no area produced evidence for more than two structural phases (Kenyon 1981: 107–108, 166–167, 213–215). By analogy with the evidence from other tell sites, the EB IV occupation is likely to have been quite modest in scale (Mazar 2006).

Settlement/activity during the LBA is also poorly understood; occupation during this period was possibly restricted to the Middle Building area (Bienkowski 1986). Relatively little evidence for earlier MBA material (MB I) has been documented from the site and, apart from a handful of burials, it is likely that main period of MBA occupation is of MB II, a period to which we assign two centuries.

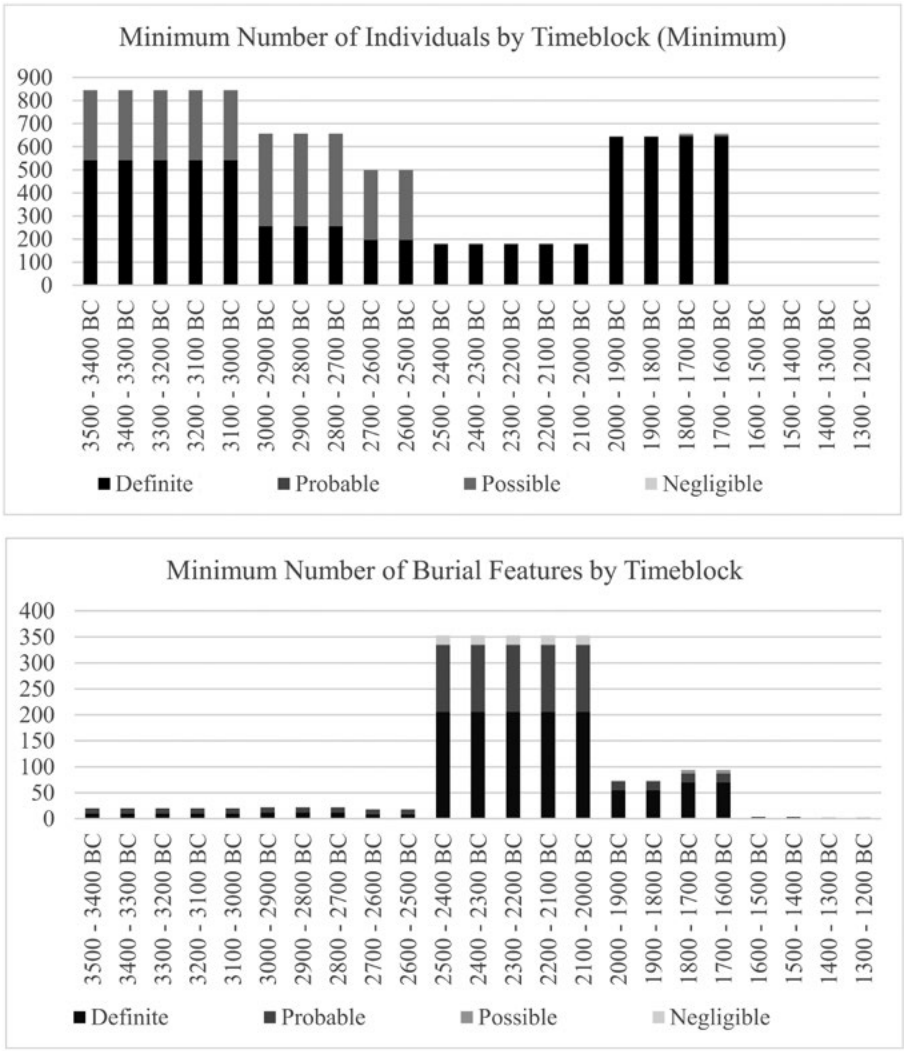

Figure 5.1. Minimum Number of Individuals (MNI) and Minimum Number of Burial Features (MNBF) from Jericho extramural cemeteries (4th–2nd millennium BC).

Comparing the figures collated by the Invisible Dead Project for the extramural cemetery (based on tomb contexts which have been definitively dated and contained skeletal material) we would be dealing with circa 80–120% of the total estimated population for the EB I–III and MB II (Table 5.1). Given these figures and Kenyon's (1965: 1) suggestion that on space grounds it might be possible to increase the number of recorded burial locales in the extramural cemetery by around 100%, and making allowance for tombs in which associated skeletal material and/or artifactual evidence was absent, we suggest that the mortuary population in these graves appears likely to have included a substantial percentage, if not all, of the living population. In contrast, using the same figures to calculate the proportion of the population represented by individuals from the settlement mound/Spring Hill (and assuming that all the material assigned to MBA should be dated to MB II) we are dealing with no more than of 1–2% of the estimated living population. Had excavations at Jericho been restricted to the tell our reconstructions would, therefore, be very different. The site of Jericho is remarkable for the degree of preservation and extent of excavations. However, as shall be explored below, it is perhaps more unusual than previously envisaged.

Megiddo

Located on the eastern flank of the Carmel Range, modern Tell el-Mutesellim (ancient Megiddo) has been the subject of significant excavations since the early 20th century (Guy and Enberg 1938; Lamon and Shipton 1939). Although a figure of 50 ha has been cited for the EB IB settlement at Megiddo (Finkelstein and Ussishkin 2000: 583–584), the figure of 12 ha, cited by the Megiddo Hinterland Project a few years later (Finkelstein *et al.* 2006: 721), appears more credible — see also Braun (2013: 1). Occupation dating to the MBA–LBA appears to have encompassed the entire site, including the

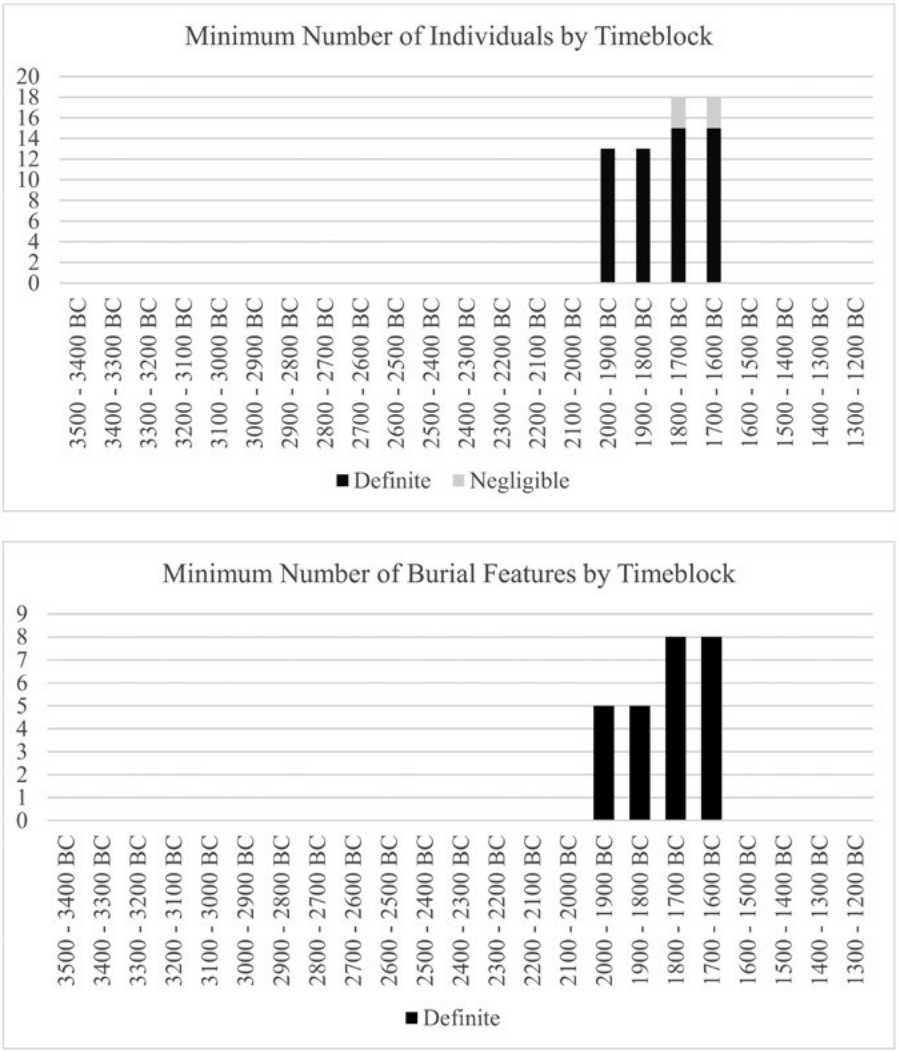

Figure 5.2. Minimum Number of Individuals (MNI) and Minimum Number of Burial Features (MNBF) from Jericho intramural burials (4th–2nd millennium BC).

lower terrace, a total of around 12 ha, although the site may have attained 13.5 ha in the later MBA (Arie 2008: 11). Excavations on the central mound revealed burials (intramural) in Areas AA and BB (Loud 1948: 15, 87–98), while substantial extramural cemeteries of different periods were identified on the eastern slopes of the mound (e.g., Arie 2008; Guy and Engberg 1938; Ilan 2013).

Estimating the mortuary population (the extramural cemetery)

If we compare the plots in Figure 5.3, two main patterns are visible. Firstly, there would appear to be a decrease in the number of burial features from the late 4th into the 3rd millennium BC (EB II material, as traditionally defined in Northern Palestine, is absent at Megiddo), followed by a significant increase in numbers during the 2nd millennium BC, with a peak in the LBA II (1400–1200 BC). The MNI plots, however, show a completely different trend, with values decreasing significantly at the end of the 4th millennium BC and only increasing in any significant manner during the LBA I (1600–1400 BC). In other words, from the beginning of the MBA (circa 2000 BC), while we see an increase in tomb cutting/construction, the number of individuals being deposited within, or at least recovered from, each tomb appears to have declined.

Estimating the mortuary population (main tell)

Compiling numbers for the MNBF and MNI from the settlement mound of Megiddo reveals similar patterns to Jericho. While skeletal remains pre-dating the MBA have occasionally been recovered, these are not found in association with deliberate burial constructions/features (Figure 5.4) but represent skeletal material intermixed with general occupation layers/deposits. The relationship between the MNBF and MNI plots demonstrates two diverging trends: an increase in the

Table 5.1. Estimated figures for population over time compared against values for the MNI.

Period	Total Estimated Population	MNI (Min)	% of Est. Population	MNI (Max)	% of Est. Population
100 individuals per hectare, 1.0 ha (EB I–III) 1.5 ha (MBA) and life expectancy of 35 years (Period length/35 year life expectancy) x (100 individuals x estimated site size) e.g., EB IB = (300 years/35 year life expectancy) x (100 individuals x 1 ha) = Total Estimated Population of 857					
EB IB (3300–3000 BC)	857	848	98	1048	122
EB II (3000–2700 BC)	857	657	77	1057	123
EB III (2700–2500 BC)	571	500	88	700	123
MB II (1800–1600 BC)	857	648	76	649	76
MB II (1800–1600 BC) Spring Hill	857	7	0.8	18	2
NB. These figures include Garstang's Tomb A (MNI of 300–500 individuals) dated to EB I–III, this figure is taken as a possible MNI for EB I, II, and III					

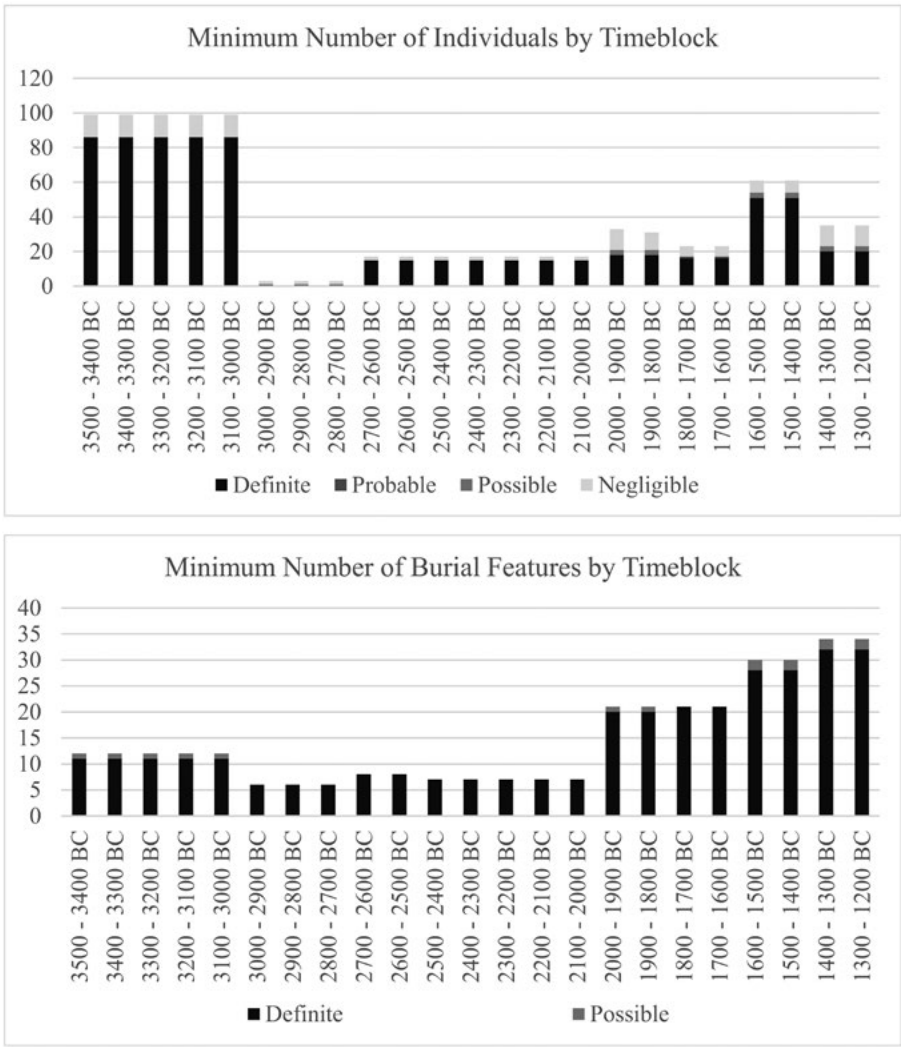

Figure 5.3. Minimum Number of Individuals (MNI) and Minimum Number of Burial Features (MNBF) from Megiddo extramural burials (4th–2nd millennium BC).

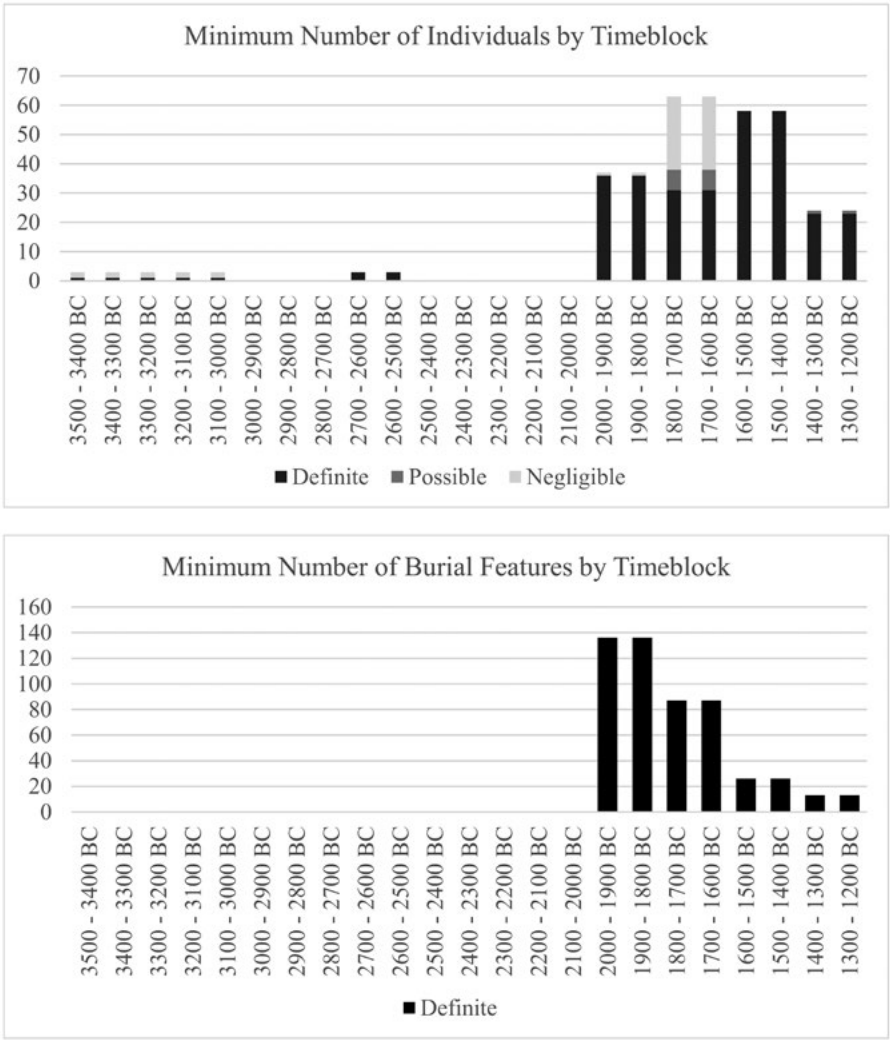

Figure 5.4. Minimum Number of Individuals (MNI) and Minimum Number of Burial Features (MNBF) from Megiddo intramural burials (4th–2nd millennium BC)

MNI during the latter half of the MBA, at the same time as a decrease in the MNBF. It is likely that, as at Jericho, this reflects the dominance of multiple successive burial practices during this period, although perhaps not on the same scale as during the Early Bronze Age in the extramural cemetery. Having said this, we also have to take into account the fragmentary nature of the data from Megiddo and the early date of excavations. There are multiple cases, both pre- and post-dating this phase where we know the numbers and forms of burial features, but have no corresponding data on the skeletal material. What is apparent, however, is the shift at the beginning of the MBA, to the use of both extramural and intramural locations for burial of both adults and children.

Comparing estimates for the living and the dead

Throughout all time periods at Megiddo we appear to be dealing with a tiny proportion of the expected mortuary population, a figure of 0.03–1.74% based on the current evidence and calculations. The proportion of the dead appears to increase during the latter half of the 2nd millennium BC, although due to the fragmentary nature of the evidence our estimates of numbers per burial may be significantly underestimated, especially for earlier periods (i.e., EB I). It is perhaps significant, however, that there is a decline in burial numbers in the 3rd millennium BC, a period during which, at least in the Southern Levant, our evidence for burial practices appears to be much more restricted in comparison to the earlier 4th millennium BC (see below for further discussion).

Qatna

Located along the Wadi Zora, Tell Mishrifeh (ancient Qatna) is a key site for interpretation of urban development in the Northern Levant during the later 3rd and 2nd millennia BC. Excavations and survey

Table 5.2. Estimated figures for population over time compared against values for the MNI.

Period	Total Estimated Population	MNI (Min) Tell and Cemetery	% of Estimated Population	MNI (Max)	% of Estimated Population
100 individuals per hectare, 12 ha and life expectancy of 35 years (Period length/35 year life expectancy) x (100 individuals x estimated site size)					
EB IB (3300–3000 BC)	10286	87	0.846	102	0.991
EB II/III (2900–2500 BC)	13714	18	0.131	20	0.146
MB I (2000–1800 BC)	6857	54	0.788	68	0.99
MB II (1800–1600 BC)	6857	47	0.685	86	1.25
LB I (1600–1400 BC)	6857	109	1.590	119	1.74
LB II (1400–1200 BC)	6857	43	0.627	59	0.86
100 individuals per hectare, 13 ha and life expectancy of 35 years					
EB IB (3500–3000 BC)	11143	87	0.780	102	0.915
EB II/III (2900–2500 BC)	14857	18	0.121	20	0.135
MB I (2000–1800 BC)	7429	54	0.727	68	0.92
MB II (1800–1600 BC)	7429	47	0.633	86	1.16
LB I (1600–1400 BC)	7429	109	1.467	119	1.60
LB II (1400–1200 BC)	7429	43	0.579	59	0.79

carried out between 1924 and 2010 (du Mesnil du Buisson 1935; Morandi Bonacossi 2007; Pfälzner 2007; Pfälzner ed. 2011) have allowed at least a partial picture of the urban organisation of the site to emerge. The earliest evidence for occupation, dating to the 4th millennium BC, was revealed by a trial trench carried out in Operation J (Morandi Bonacossi 2007: 66).

Following a hiatus in occupation, the summit of the upper town appears to have been re-occupied during EB III (Morandi Bonacossi 2007: 66) and by EB IV occupation seems to have extended across an area of at least 25 ha (Morandi Bonacossi 2007: 70). The city reached its zenith during the 2nd millennium BC (Morandi Bonacossi 2007: 70–71) and by the beginning of the MBA appears to have gained its recognisable quadrangular plan, with settlement and activity extending to circa 100 ha (Morandi Bonacossi 2007: 70–71). It is estimated that only around 5% of the overall area of occupation at Qatna has been systematically investigated; the majority of work has focused on the upper town (Morandi Bonacossi 2007: 66). From this area we have evidence for EB IV shaft tombs, excavated by du Mesnil du Buisson (1935: 155–158) in the early 20th century, as well as MBA burials (du Mesnil du Buisson 1927: 13–22; Morandi Bonacossi 2011) and the famous MBA–LBA Royal Tombs (Pfälzner 2011; 2014).

Estimating the mortuary population

One of the major challenges posed by the Qatna material is the poor preservation of many of the remains and the re-use of burial locales over extended periods of time. As Pfälzner (2011; 2014) and his team have demonstrated, the Royal Hypogeum of Qatna and Tomb VII may well have been in use for several centuries, with skeletal material being transferred from one location to another. If we also take into account the early excavation date of the EB IV shaft tombs (du Buisson 1927) and the damage to some of the MBA tombs and associated skeletal material (Morandi Bonacossi 2011: 28), it is clear that estimates might significantly underrepresent the mortuary population of this city.

No tombs or burials pre-dating the EB IV period been reported from Qatna and the earliest evidence for mortuary activity is roughly contemporary with the development of the site as a 25 ha settlement, in the second-half of the 3rd millennium BC (see Figure 5.5). The MBA cemetery, discovered by the Italian mission, appears to have consisted of a mix of shaft tombs and pit graves, the majority of which were single inhumations (Bonacossi 2011). The full extent of this cemetery, destroyed by the construction of the Royal Palace of Qatna, is not known and much of the skeletal material appears to have been disturbed due to construction of the MBA Palace (Bonacossi 2011: 11).

Comparing estimates for the living and the dead

Given the relatively limited area of excavation, uncertainties surrounding the nature of occupation and the evidence for disturbance and longevity of use of some of the burial locales, comparisons between

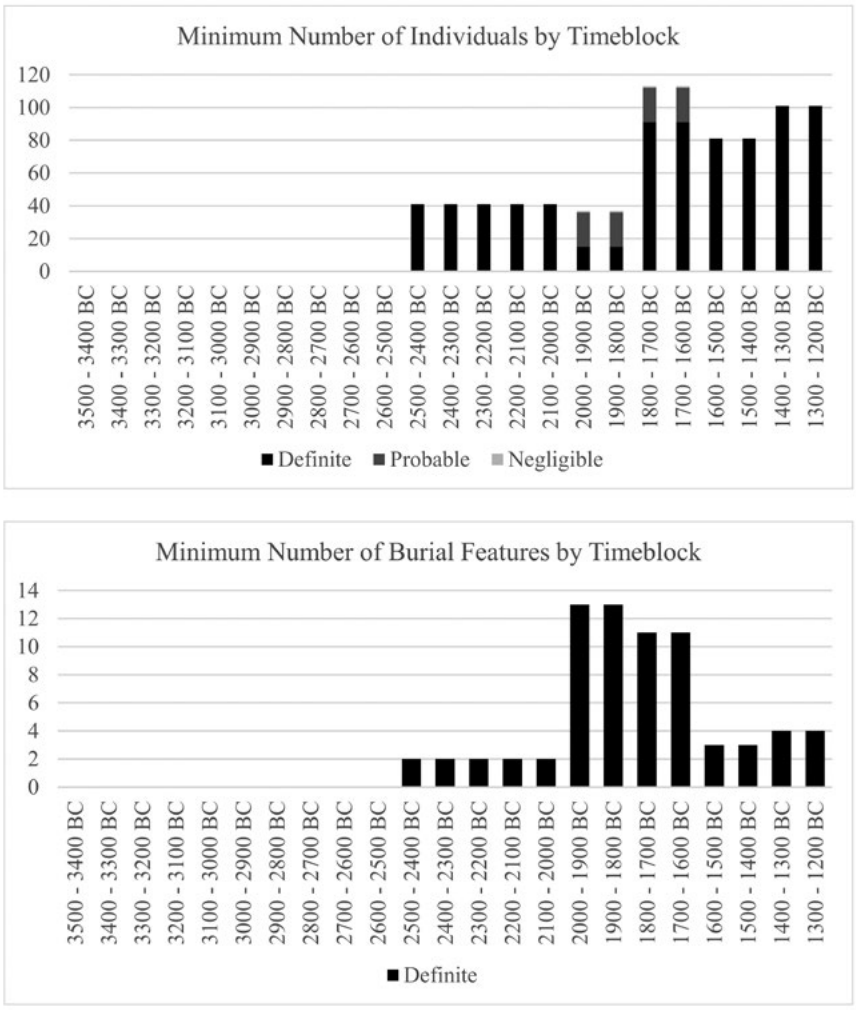

Figure 5.5. Minimum Number of Individuals (MNI) and Minimum Number of Burial Features (MNBF) from Qatna (4th–2nd millennium BC).

the living and mortuary populations are problematic. While the total area encompassed by the fortifications during the 2nd millennium BC attained circa 110 ha, Qatna may have been a 'hollow city' (Bonacossi 2007: 80) during the LBA, a site occupied by numerous administrative and public buildings with a relatively low residential population. If this was the case, reconstructions based on a density of 100 individuals per ha may result in a grossly inflated figure. However, even if we reduced the average population per ha to 50 individuals for the LBA, based on the current rates of burial retrieval and extrapolating from the 5% that has been excavated to the unexcavated 95%, we would still have evidence for well under 2% of the overall expected mortuary population (see Table 5.3). As at Megiddo, the dead at Qatna are severely underrepresented in the archaeological record.

Mapping and modelling the 'bigger picture'

The fragmentary nature of the material discussed here will come as no surprise to many readers. What is, perhaps, less expected, is the extent to which our knowledge is limited and the considerable proportion of the dead that appears to be missing from the existing archaeological evidence. The key issue is whether this is simply a case of missing evidence due to patterns of excavation and survey, or whether there are additional factors that need to be acknowledged.

Recovery patterns versus burial traditions

Recovery patterns, excavation strategies, and the intensity of fieldwork across the Levant will clearly have influenced the overall percentage of dead recorded from the archaeological record. A plot of the distribution of burial evidence (Figure 5.6) highlights the marked bias towards the Southern Levant and in particular modern Israel and Palestine. However, this is what would be expected given that research has been far more intensive in these areas compared to other parts of the Levant, and that they both offer reasonable access to online publications and databases (see Bradbury *et al.* 2015 for further discussion). When the

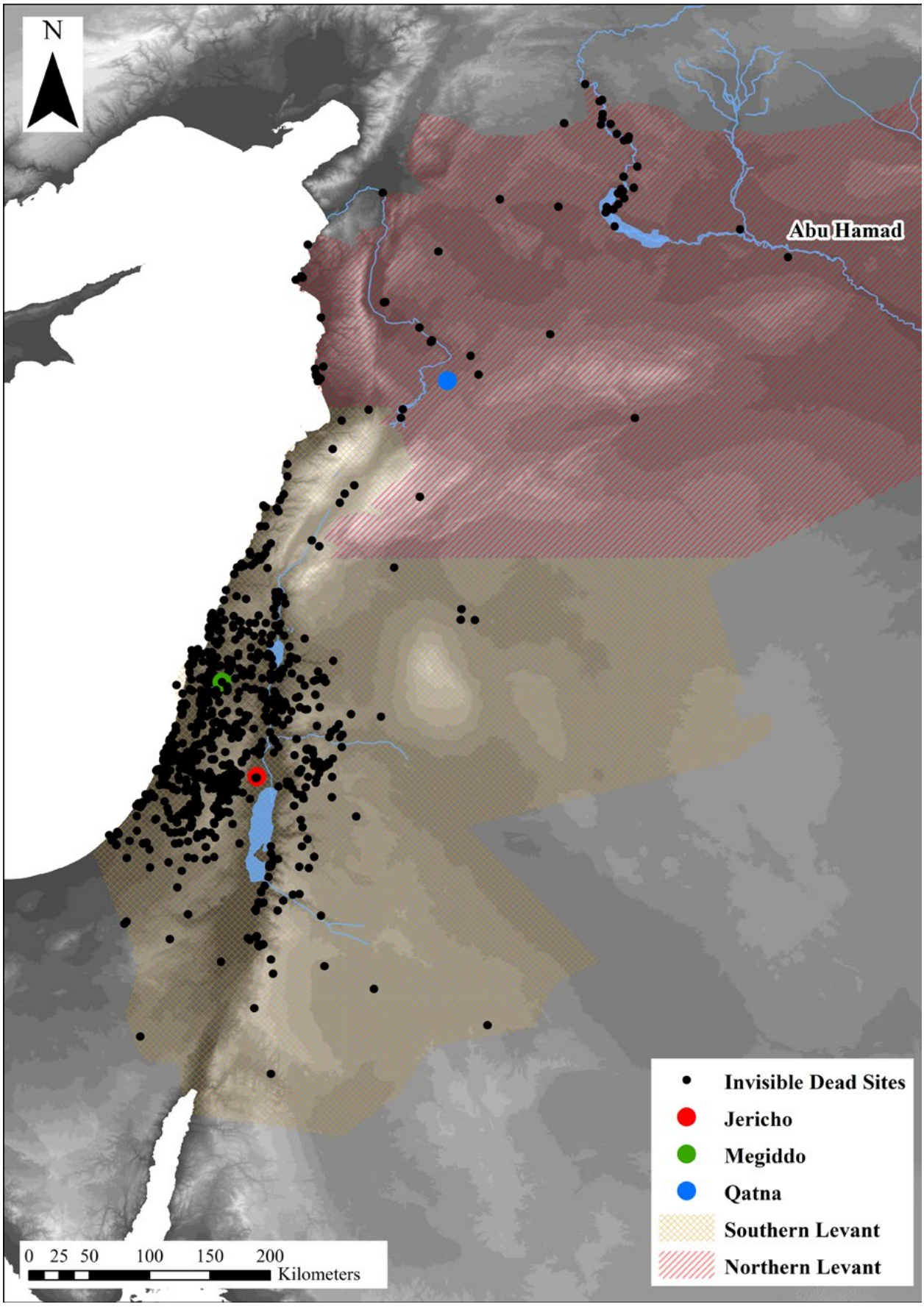

Figure 5.6. Sites recorded by the Invisible Dead Project (all periods) with the sites of Jericho, Megiddo and Qatna marked

extant burial evidence is considered, are these factors enough to account for the:

a. extreme differences between north and south,
b. degree of temporal variation,
c. marked divergences between individual sites?

The discovery and excavation of an extensive extramural cemetery at Jericho may well account for the high mortuary population documented from this particular site. Extramural cemeteries from the east slopes of Megiddo (e.g., Guy and Enberg 1938; Ilan 2013) have also been extensively excavated and even when combined with the areas of intramural burial cannot account for more than 2% of the expected mortuary population. Are we then dealing with a situation whereby, for certain periods and certain sites, only selected individuals or groups within society were allowed burial, at least in a way that is archaeologically visible?

North versus south: linking mortuary and settlement evidence

By plotting out MNIs drawn from the Invisible Dead database across the study region over time and space (Northern versus Southern Levant) and comparing this information with known settlement patterns and trends, we can detect possible phases when the dead, relative to the settlement record, appear to be highly visible and, conversely, phases when they appear to be largely 'invisible'. The Southern Levant is defined here to include Lebanon, the Damascus Basin, and Hauran, while the Northern Levant for the purposes of this study includes everything north of this point as far east as the Euphrates and the site of Abu Hamad (Figure 5.6). For Figures 5.7–5.9 we have only included MNIs where the period of attribution is definite and have taken minimum rather than maximum figures for sites where a min–max MNI range has been specified. All MNI figures, whether listed as Definite (e.g., an osteoarchaeological evaluation and likely MNI has been suggested) or Negligible (e.g., skeletal material has been recorded, but the data on MNI is not reliable) (and see Bradbury *et al.*, 2015 for further discussion of these certainty levels), have been included in the analysis.

The extent to which a single site can influence distribution plots is immediately apparent. The massive concentration of burials at the EB I site of Fifa southeast of the Dead Sea, which has produced some 10,000 cist graves (Kersel and Chesson 2013: 161), distorts the temporal distribution of the dead in the Southern Levant and disguises more subtle fluctuations (compare Figures 5.7 and 5.8). Even when removed, however, it is clear that this cemetery is indicative of a more widespread pattern, whereby the numbers of dead recorded in the archaeological record drop significantly in the Southern Levant from the 4th to the 3rd millennium (from EB I to EB II–III). A second and perhaps more intriguing observation is the clear divergence in MNI between the Southern and Northern

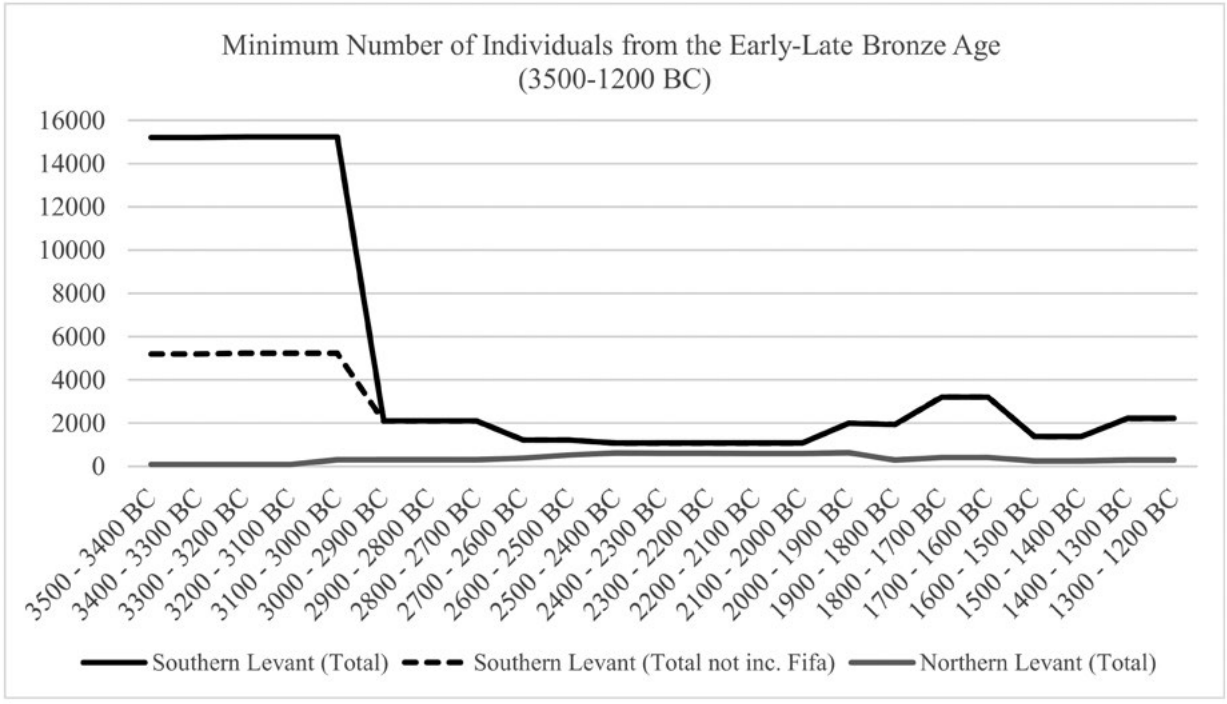

Figure 5.7. MNI plotted out by 100-year time block from the Northern and Southern Levant.

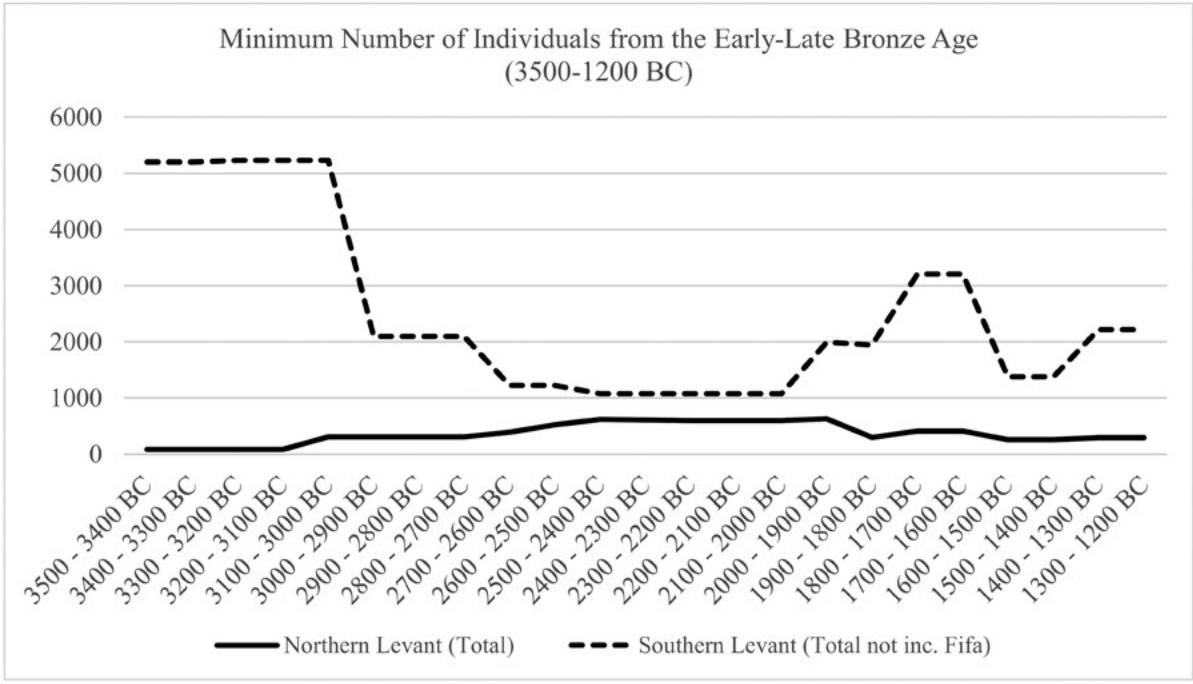

Figure 5.8. MNI plotted out by 100-year time block from the Northern and Southern Levant. The cemetery of Fifa with circa 10,000 possible burials has been excluded from this plot.

Levant over time. Not only are the numbers of recorded dead from the Southern Levant significantly greater than those from the Northern Levant, the two regions also reveal different mortuary profiles, particularly during the 3rd millennium BC.

If patterns of fieldwork were solely responsible for these distributions, we might expect the divergences between the two regions to be fairly consistent over time. If we disregard the absolute figures from the two regions and instead express the mortuary population for each area, at any given time slice, as a percentage of the overall total for the Levant (Figure 5.9) it is clear that this is not the case. Instead, it may be possible to suggest that there are several different factors influencing, not only the numbers of dead in the archaeological record, but also their relative distributions. It should be noted that because we have used time blocks (i.e., based on the total MNI for a given period having an equal likelihood of having occurred within each 100-year block), the figures here cannot be interpreted cumulatively. To put it simply, we are concerned here with the relative distributions and patterns rather than the absolute figures produced by the plot. Three broad phases can be identified (Figure 5.9). The first begins in the second-half of the 4th millennium BC, when the relative percentage of dead in the Southern Levant significantly outweighs that from the Northern. The situation shifts during the later 3rd and early 2nd millennia BC, with the relative percentages of dead in the Northern Levant increasing substantially during the EB IV and early MBA Periods, while the opposite pattern can be observed in the South. It is not until the 2nd millennium BC (from circa 1900/1800 BC) that the two regions appear to come into step with one another.

The later 4th millennium bc in the Southern Levant: expansion and networks of interaction

The later 4th millennium BC saw human groups exploit regions such as the steppe and uplands in new ways and at a previously unprecedented scale (e.g., Bradbury *et al.* 2014; Müller-Neuhof 2014; Nicole and Braemer 2012; Philip and Bradbury 2010; Wilkinson *et al.* 2014). At the same time larger population centres emerge, for example in the north Jordan Valley (Wilkinson *et al.* 2014: 88). How far these new centres correspond to traditional models of stratified urban existence has been a matter of some debate and researchers have recently begun to construct models of corporate, multi-resource societies, with shifting and flexible groups coming together at different levels of social interaction (Bradbury *et al.* 2014; Nicolle and Braemer 2012). Within such loosely structured societies, burial practices may have been a medium through which group cohesion could be expressed and articulated (Bradbury *et al.* 2014: 225). The elevated burial numbers in the Southern Levant may represent flexible and multi-resource groups, utilising particular micro-regions (e.g., the Dead Sea region), and for whom social cohesion was

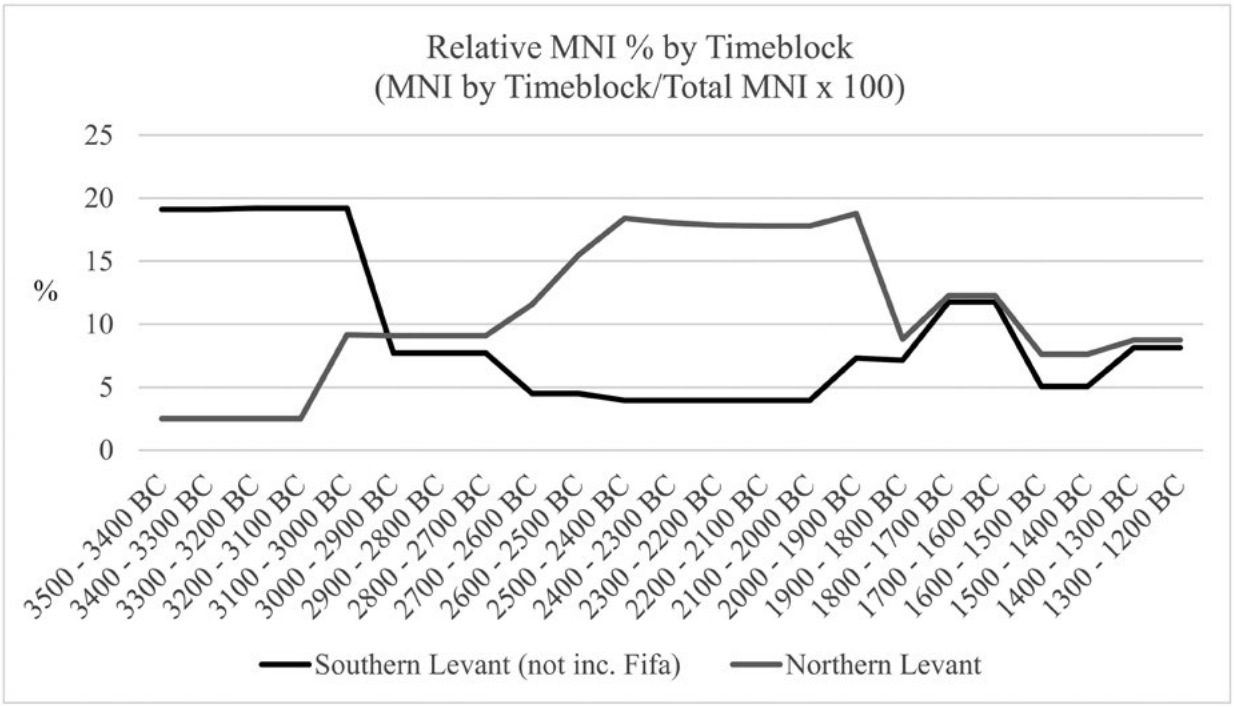

Figure 5.9. MNI by 100-year time block plotted as a % of the overall MNI numbers from all periods from each region.

partly maintained through the integration of the dead into large corporate groupings. The question, then, is why do patterns change at the beginning of the 3rd millennium BC? With the exception of sites such as Bab edh-Dhra and Jericho, there is significantly less evidence for EB II–III burials within this region than for EB I (Ilan 2002: 97). As with Jericho, Bab edh-Dhra may represent a fairly unique site in this respect, with charnel houses from the EB II–III housing hundreds of individuals organised on a corporate household model (Chesson 2003). Outside the confines of the Dead Sea region, the growing nucleation of population within walled settlements, often in prominent locations (Philip 2003: 114–115), may have reduced the importance of burial, or at least the burial of a significant proportion of the population, as a means of inscribing the community into the landscape. It is possible that growing social differentiation during the 3rd millennium BC served to restrict the proportion of the community that it was deemed appropriate to bury, with this practice no longer considered a fundamental element of social reproduction.

The 3rd millennium bc in the Northern Levant: expansion and individualisation

During the 3rd millennium BC the visibility of the dead in the Northern Levant significantly increased, in particular at sites in the Euphrates Valley. Based on recorded MNIs, burial activity reaches its peak during this period and similar mortuary population figures are not seen again until well into the 1st millennium BC. This amelioration would appear to coincide with a phase in western Syria, which has come to be known as the 'Second Urban Revolution'. This period witnessed the growth of urbanised centres along the Euphrates and Khabur, with subsequent expansion and activity into the climatically marginal steppe during EB IV in western Syria. The process appears to have taken place several centuries earlier in the Western Jazira (Wilkinson *et al.* 2014: 93, Table 4). The burial practices dating to this period vary and include richly furnished single or double inhumations such as that from Qara Quzaq (Olávarri 1995: 15–23), rich multiple successive burials such as Tomb 302 at Jerablus Tahtani (Peltenburg 1999), and the deposition of disarticulated commingled skeletal remains such as those recovered from the White Monument at Tell Banat (Porter and McClellan 1999). The co-existence of these different burial forms may, as Porter (2002: 169) has suggested, represent the interplay and possible emerging tensions between ancestral tribal and emerging state elements or, articulated slightly differently, individualising and communal tendencies within society. As Wilkinson *et al.* (2014: 82–84) have demonstrated, settlement and activity during the mid–late 3rd millennium BC in the Northern Levant was dynamic. The burial practices reflect this; groups and individuals were negotiating power structures and identity in new ways, for example through the increasing deposition of metal objects and weapons in the burial record (Philip 2007: 194–195; Stork 2015) and at new scales and levels of intensity.

One of the remaining questions, however, is why we have so little evidence for 4th millennium BC burial practices. Urbanisation in northeast Syria extends back well into the 4th and 5th millennia BC (e.g., al-Quntar et al. 2011; Stein 2012; Ur *et al.* 2011), but apart from offsite burials at sites such as Tell Brak (McMahon *et al.* 2011) and sites further east such as Tepe Gawra (Akkermans and Schwartz 2003: 190), there is little or no published evidence for adult burial practices from the Late Chalcolithic Period. In this respect the 3rd millennium BC in the Northern Levant, and particularly in northwestern Syria and the Euphrates Valley, stands out as a period of burial intensity and innovation.

The 2nd millennium bc: regional powers and control?

From the beginning of the 2nd millennium BC, both the Northern and Southern Levant appear to come into step with one another. While elevated burial figures are apparent during the second-quarter of the 2nd millennium BC (MB II), the mortuary populations of both regions do not return to the levels of either the 4th (Southern Levant) or 3rd (Northern Levant) millennia BC. We are faced with a period when the mortuary evidence appears to be telling a distinct and divergent story from that of the settlement record. The early–mid 2nd millennium BC in the Southern Levant has traditionally been characterised as a phase of re-urbanisation (Cohen 2014: 451). In the Northern Levant the evidence points towards a patchwork of regionally diverse settlement trajectories (Morandi Bonacossi 2014: 416–420). With this 'big picture' in mind, if we once again consider the mortuary population from Qatna, the proportion of the probable dead who appear unrepresented in the archaeological record is even more striking. Our knowledge of the lower town of Qatna during the MBA is undoubtedly very imprecise (Morandi Bonacossi 2007: 74, fn. 44). If, however, we take the cemetery discovered from the upper town as broadly indicative of the burial practices for both high status (shaft graves) and less elevated persons (pit graves) for adults, children, and infants (Morandi Boncassi 2011: 34), we can extrapolate from the excavated 5% of site to the unexcavated 95%. Tomb I, a MBA shaft tomb excavated by Mesnil du Buisson (1927: 13–22) in the 1920s, has yielded evidence of at least 21 individuals. Although the material encountered in this tomb was highly fragmentary and the MNI as reported may have been significantly underestimated (du Mesnil du Buisson 1927: 14), we can use this as a guide-figure for the maximum number of individuals we might expect on average. To account for 100% of the estimated mortuary population posited for MBA Qatna (see Table 5.3) we would need to discover a cemetery, or group of cemeteries, containing at least 3000 shaft tombs, each containing at least 21 individuals. The majority of tombs excavated by Morandi Bonacossi (2011: 14) were single inhumations and if this pattern were applicable across the site we would have to identify tens of thousands of burials of this kind to account for the estimated population. This leads us to ask whether it is more likely that such a large cemetery, or collection of cemeteries, exists somewhere in the lower town, or perhaps in an as yet unidentified extramural location in the vicinity of Qatna, or that the dead were being buried, or otherwise disposed of, in a manner that is not archaeologically visible.

At the broad scale, the decreased visibility of the dead seen from the MBA continues into the LBA. It might be suggested that the development of large regional polities, and the associated network of connections and affiliations that characterised the socio-political world of the Late Bronze Age (Akkermans and Schwartz 2003: 327), may have resulted in growing restrictions on the categories of person that were accorded a formal burial, at least of a kind that would become archaeologically visible. This is not to suggest that this process occurred in a uniform manner and at exactly at the same time across the entire Levant. As sites such as Jericho demonstrate, substantial portions of the overall population, in some places at least, may still have disposed of their dead in an archaeologically visible manner. Even at Jericho, however, we see control emerging through a different mechanism, via the ability to dictate where different individuals or groups could be buried (e.g. off- and on-site).

The 'big picture' and remaining questions

This paper represents a somewhat speculative attempt to interrogate the mortuary record at a 'big picture' scale. It is has endeavoured to show how, by exploring spatial and temporal discontinuities in the mortuary record and individual settlement biographies, we can reveal new and intriguing avenues for future investigation. Numerous questions remain; for example, to what extent is our use of MNI blurring further patterns and how do differential patterns of skeletal preservation, documentation, and discovery bias our interpretations? Are well-excavated cemeteries, such as Jericho, distorting the picture or do they provide examples of sites that may diverge from regional trends? Perhaps one of the most fundamental questions that still requires an answer is exactly who are we seeing in the mortuary record? Research has illustrated the differential visibility of groups such as children (e.g., Nagar and Eshed 2000) within society. Archaeological accounts appear to suggest that for the majority of periods the available burial record provides a representative sample of elite and non-elite burials (e.g., for the Middle Bronze Age: Akkermans and Schwartz 2003: 322; Genz 2012: 624–625). However, in light of the sheer numbers of dead that are missing from the archaeological record as currently known,

we should perhaps question current assumptions, and view the treatment of the dead in the Bronze Age Levant as protean. We need to research more intensively those practices which would not necessarily lead to archaeologically visible remains; for example, disposal of the dead in water, the scattering of cremated remains, exposure of the dead in the open air, or shallow 'topsoil' burials in the agricultural landscape. These disposal methods should not necessarily be seen as the antithesis of a 'proper burial'. Whatever hypothesis we use to account for the 'invisible' dead, it is possible that at some space-time loci, the key constitutive element of an elite burial was not the grave goods, but simply the right to a burial at all.

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